

AMENDMENTS TO THE CLAIMS

The following list of claims replaces all prior versions and lists of claims:

Claim 1 (Currently amended): A composition, comprising:

a pharmaceutically acceptable excipient; and

bacteria with altered DNA adenine methylase activity ~~which~~ wherein the altered DNA adenine methylase activity renders the bacteria non-pathogenic and further wherein the DNA adenine methylase activity is altered by altering the expression of the DNA adenine methylase (*Dam*) gene.

Claim 2 (Original): The composition of claim 1, wherein the bacteria are altered by an artificially engineered change in the bacteria's genome.

Claim 3 (Original): The composition of claim 2, wherein the change in the bacteria's genome is a change selected from the groups consisting of a deletion, an insertion and a mutation of a native sequence.

Claim 4 (Original): The composition of claim 1, wherein the bacteria are altered by a heterologous nucleotide.

Claim 5 (Original): The composition of claim 4, wherein the heterologous nucleotide is operatively inserted into a plasmid and expresses DNA adenine methylase.

Claim 6 (Previously Presented): The composition of claim 1, wherein the bacteria are selected from the group consisting of *Escherichia*, *Vibrio*, *Yersinia*, and *Salmonella*.

Claim 7 (Previously Presented): The composition of claim 6, wherein the bacteria are *Salmonella* bacteria selected from the group consisting of *S. typhimurium*, *S. enteritidis*, *S. typhi*, *S. abortus-ovi*, *S. abortus-equi*, *S. dublin*, *S. gallinarum*, and *S. pullorum*.

Claim 8 (Withdrawn): The composition of claim 6, wherein the bacteria are *E. coli*.

Claim 9 (Withdrawn): The composition of claim 6, wherein the bacteria are *V. cholerae*.

Claim 10 (Withdrawn): The composition of claim 6, wherein the bacteria are *Y. psuedotuberculosis*.

Claim 11 (Withdrawn): The composition of claim 1, wherein the bacteria are selected from the group consisting of *Shigella*, *Haemophilus*, *Bordetella*, *Neisseria*, *Pasteurella* and *Treponema*.

Claim 12 (Withdrawn): The composition of claim 1, wherein the bacteria are selected from the group consisting of *Neisseria meningitidis* and *Pasteurella multocida*.

Claim 13 (Withdrawn): The composition of claim 1, wherein the bacteria are *Haemophilus*.

Claim 14 (Original): The composition of claim 1, further comprising an adjuvant.

Claim 15 (Currently amended): An immunogenic composition, comprising:
a pharmaceutially acceptable excipient; and
live bacteria, said bacteria comprising altered DNA adenine methylase (Dam) activity
wherein the altered activity reduces virulence relative to the bacteria with wild-type Dam activity
and further wherein the DNA adenine methylase activity is altered by altering the expression of the DNA adenine methylase (Dam) gene.

Claim 16 (Original): The immunogenic composition of claim 15, wherein the Dam activity is altered by a heterologous nucleotide.

Claim 17 (Original): The immunogenic composition of claim 15, wherein the Dam activity is altered by a mutation in the bacteria's genome which mutation alters a gene involved in expressing

Dam in a manner selected from the group consisting of reduced expression, no expression, overexpression, expression of a form of Dam altered from Dam native to the bacteria.

Claim 18 (Currently amended): An attenuated strain of a pathogenic bacteria, said bacteria containing a mutation in the regulatory or coding regions of the DNA adenine methylase (*Dam*) gene which alters Dam activity such that the bacteria are attenuated.

Claim 19 (Original): The attenuated strain of claim 18, wherein the mutation reduces Dam activity.

Claim 20 (Original): The attenuated strain of claim 18, wherein the mutation eliminates Dam activity.

Claim 21 (Original): The attenuated strain of claim 18, wherein the mutation is a deletion in a *dam* gene.

Claim 22 (Original): The attenuated strain of claim 18, wherein the mutation causes an increase in expression of Dam.

Claim 23 (Withdrawn): The attenuated strain of claim 18, wherein the bacteria is *Haemophilus*.

Claim 24 (Withdrawn): The attenuated strain of claim 18, wherein the bacteria are selected from the group consisting of: *E. coli*, *Shigella spp.*, *Vibrio cholerae*, *Yersinia spp.*, *Neisseria meningitidis*, and *Legionella pneumophila*.

Claim 25 (Withdrawn): The attenuated strain of claim 18, wherein the bacteria are selected from the group consisting of *Neisseria meningitidis* and *Pasteurella multocida*.

Claim 26 (Withdrawn): A method, comprising the steps of:

administering to a subject capable of generating an immune response a composition comprising a pharmaceutically acceptable excipient an immunogenic dose of altered bacteria with altered DNA adenine methylase (Dam) activity which bacteria are attenuated; and

allowing the composition to remain in the subject for a time and under conditions to allow the subject to generate an immune response to the bacteria and produce antibodies specific to the bacteria subject.

Claims 27-30 (Cancelled)

Claim 31 (Withdrawn): The method of claim 26, wherein the bacteria are selected from the group consisting of *Echerichia*, *Vibrio*, *Yersinia* and *Salmonella*.

Claim 32 (Withdrawn): The method of claim 26, wherein the bacteria are *Haemophilus*.

Claim 33 (Withdrawn): A method of eliciting an immune response in an individual, comprising:

administering an immunogenic composition to an individual in an amount sufficient to elicit an immune response wherein the composition comprises a pharmaceutically acceptable carrier and a bacteria comprising a genome characterized by a mutation altering DNA adenine methylase (Dam) activity such that the bacteria is attenuated;

allowing the composition to remain in the individual for a time and under conditions to allow the individual to generate an immune response.

Claim 34 (Withdrawn): The method of claim 33, wherein the bacteria are *Haemophilus*.